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SEVERAL PROBLEMS IN REALIZING 'TRANSFORMATION' OF
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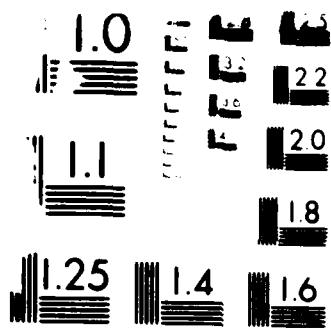
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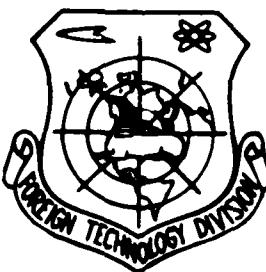


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by

Liu Fohua

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SEVERAL PROBLEMS IN REALIZING "TRANSFORMATION" OF MILITARY INSTITUTES

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The decision on the reform of science and technology systems by the Central Committee of the Chinese Communist Party has clearly pointed out that the direction and duty of the reform of national defense scientific research organizations is to realize several "transformations". This article discusses several problems in realizing these "transformations". There are bound to be errors in this article; however, the purpose is to throw in a few ideas for the sake of promoting more and better ideas in order to advance reform.

I. Basic Concept of "Transformation"

The basic conditions of the existing national defense scientific research system are: (1) duties are assigned by the government and the funding for administrative matters of scientific research rely on government appropriation. (2) scientific research is only for military items, not for civilian use; results from military scientific research can not be quickly and effectively transformed to civilian use. (3) it is only willing complete the assigned projects. No one cares about developing the management aspects, and no one talks about cost effectiveness. (4) the superior levels maintain tight control. The institute has no decision-making authority. Thus, the

institute becomes a "pure ordnance type", "pure scientific research type", and "closed type" (abbreviated as the old-three type) institute. The drawback of this kind of management system is that the institute shares the government's "Big Rice Pot", the staff shares the institute's "Big Rice Pot" and everyone holds an "Iron Rice Bowl". No one worries about losing his job. Hence, the institute lacks pressure, motivation and vitality. Implementation has proven by the day that this can no longer meet the requirements for achieving the "Four Modernizations" and is seriously inhibiting the realization of the strategic guideline that "economic restoration must rely on science and technology, whereas science and technology must be geared toward economic construction".

According to the spirit of "The Decision on the Reform of Science and Technology System by the Central Committee of the Chinese Communist Party", the reform of national defense scientific research organizations must realize the "Three Transformations", i.e., the funding of scientific research administrative matters by the government according to the administrative system's appropriation is transformed into a compensatory contract system (to sign both longitudinal and lateral contracts) and scientific foundation system; the exclusive military item type is transformed into military and civilian combination type; the pure scientific research type is transformed into scientific research and production management type, and is geared toward society and economic construction so that a new-three-type institute of "Military and civilian combination type", "scientific research and production management type" and "open type" is established.

This is a fundamental transformation of the scientific research management system. The "old-three-type" represents the backward management model of the 50's, and its operation centered around instructions from the superior level with the

characteristics of "wait, rely, request, report". The so-called "wait" means to wait for the superior level to assign projects; "rely" means to rely on government appropriation; "request" means to request that the superior level solve problems and difficulties; and "report" means to submit reports to explain reasons and adjust plans when the project is not completed. The "new-three-type" represents the modern scientific research management model, and its characteristics are, under the premise of accomplishing longitudinal and lateral contract duties of military items, to enhance managerial decision-making; to put great effort into developing civilian goods; to develop the technology market; to upgrade technological cost and social effectiveness in order to achieve self-sufficiency in operational expenses.

II. Transformation Concept Is the Thought Basis for Realizing the "Three Transformations"

In order to realize the "Three Transformations", those old concepts, old habits and old methods that are not compatible to them must be transformed, and the first priority is to transform the concept. Once the concept is transformed, the transformation of habit and method will follow. Then what are the concepts that should be transformed and established?

1. Concept of Time - The old proverb says: "An inch of time is worth an inch of gold, whereas an inch of gold can not buy an inch of time". It very concisely and profoundly illustrates the preciousness of time. It is absolutely impossible to engage in management development, technological market development and competition without the concept of time. Yet a poor concept of time is exactly the kind of state we are currently in. The more we dig, the taller the mountain gets; the more we fill, the deeper the ocean becomes. Repetitive haggling makes people miss the point and nonsensical conversation and meaningless arguments are still prevalent everywhere. The lack of a sense of urgency in completing various duties has wasted much precious time - time has become a worthless item.

2. Concept of Cost Effectiveness - Since the funding for the military institutes has long been relying solely upon the government, there exists the thought of a supply system and many people even lack the concept of cost effectiveness. Therefore, cost is not a subject in scientific research and bundles of money are carelessly spent. There are huge attrition and numerous loopholes, and the waste problem is serious. With the concept of cost effectiveness, management will necessarily be enhanced, and the aforementioned phenomena will be vastly reduced, and the cost effectiveness will certainly be greatly increased.

3. Concept of Efficiency - The biggest problem of our entire economic system (including military institutes) is not in quantity but in quality and management efficiency. A lot of management personnel lack the concept of efficiency; they drag their feet in tending to their matters and thus efficiency is low. With the concept of efficiency, fat will necessarily be cut and bureaucracy simplified. Those nonessential organizations will not be established; those nonessential positions will not be filled; and those nonessential meetings will not be held. Meetings produce decisions, and decisions will be carried out. Responsibility will be tracked down impartially for those who make mistakes.

4. Concept of Market - Persistent isolation has made military institutes ignorant of the concept of market, and they have done very little basic studies on market analysis and prediction. We must pay attention to investigation and analysis of the market. Information feedback must be closely monitored to make the market the starting and finishing point for the development of technology and civilian goods. This is the basis for good management development.

5. Concept of Competition - Taking the initiative is derived from the concept of competition. Every measure is foreseen and analyzed to thoroughly maintain firm control over various basic

actions for conducting competition in order to create conditions for being the stronger competitor in the bid soliciting and bidding competition for military item duties and in the competition for civilian goods and technology market development.

6. Concept of Service - Stand by the motto of reputation first and every effort is geared toward the clients. Provide better services in order to constantly develop a new technology market, expand the field of service and sign more longitudinal and lateral contracts, thereby laying the base for obtaining more economic returns.

7. Concept of Value - The effects of "leftist" thoughts such as "the more learned, the more reactionary" and "no respect for talent" must be eliminated, and the concept of information, talent and expertise values must be established. This policy must be thoroughly implemented.

8. Concept of Strategy - There must be ^a~~A~~ strategic viewpoint to put the big picture in proper perspective and put heavy emphasis on managerial decision-making. We must concentrate on the short-terms and combine the long and short-terms to earnestly implement in order to obtain results and sustained competitive capability.

The aforementioned eight concepts require that they be established at every leadership level and the leadership must exemplify through their own actions to educate and influence the entire rank and file.

III. Adjustment to the Cadre Structure and Tapping and Foster-Talents are the Keys to Realizing the "Three Transformations"

Comrade Mao Zedong once said, "After the political line is set, the cadre becomes the determining factor." Premier Zhao points out that "in order to transform the enterprise into

a developmental type, managerial type enterprises, the key lies in reforming the personnel system of enterprises. After talents are properly tapped, authority must be delegated, and usually within 6 months or a year after this is appropriately done, major changes will occur". Therefore, those fine middle-aged and young persons who stedfastly support the party lines, directives and policies since the Eleventh Three Central Committees Plenary Convention, who meet the requirements for the "Four Modernizations" and who are eager for reform, must be promoted to positions of leadership. After adjustment, the cadre structure must be reasonable. The decision on the reform of the economic system by the Central Committee of the Chinese Communist Party has clearly pointed out the duties of enterprise leadership cliques: to produce plant managers (managers) who can effectively organize and command enterprise production and management; to produce chief engineers who can greatly enhance technology management of enterprises and promote technological advances; to produce chief economists who can truly upgrade enterprise management and increase effectiveness; to produce chief accountants who can strictly uphold financing discipline, make economizing plans and develop funding sources; to produce party secretaries who can steadfastly hold correct political direction and solidify the vast rank and file of the enterprises. Although the institutes are somewhat different from enterprises in the management style, they should also refer to the cadre structure of enterprises in selecting their cadres if they want to transform in the direction of "Scientific Research, Production, Management Developmental Type". Based on current circumstances, it should especially be required that the director of the institute have scientific research production and sovereign management and decision-making command capability and that the director have the ability to transform the institute in the direction of open type and modernized management, and that there must also be the talents of a chief accountant and a chief economist to assist the director in controlling management, economizing,

developing funding sources and increasing effectiveness.

Economic restoration must rely on science and technology, and the restoration and development of institutes are the same way. But science and technology will not fall from the sky; they rely on human control. Hence, the bottom line is whether there are talents or not. For example, we conducted the manufacturing of instant Digital Beauford Device (DBD) in the second half of 1984. Said device has advantages such as wide operating span, fast measuring speed, high accuracy, etc., but it is quite difficult to make and the key technology is the Butler feedback electrical circuitry. The technical staff who took on this duty, based on the analyses of pertinent foreign technical information and combined them with the technical and technological characteristics of our institute, boldly conducted major design simplification for the Butler circuitry of DBD and obtained a major breakthrough. In only 5 months time, the instant digital Beaufort device with our country's characteristics was successfully manufactured. Said device was technically certified by ^a high level organization and its various indexes were all considered to have met design requirements. Said device has filled the blank in this field of our country and has reached the level of similar products of the early 80's abroad. This example has fully demonstrated that without talent, it is impossible to have such high level and high efficiency. Therefore, we must not only exploit the active effects and potential abilities of existing talents but must also properly foster the university and junior college graduates assigned to us every year. We must develop and tap talent through all the channels (e.g. sign up for television university, short-term training, and encourage self-study, etc.) in order to have good successes. We must not only have a large number of science and technology talents but also must have high caliber, competent management talents.

Undoubtedly, with a reasonable cadre structure plus various talents, we shall overcome all difficulties during the march

forward and victoriously accomplish the reform to realize the duty of the "Three Transformations."

IV. Transformation of Management Organization is the Organizational Basis to Realizing the "Three Transformations"

The original management organization is determined by the old science and technology management system, and it can no longer adapt to the requirements for science and technology reform. There must be reform to establish management organizations that are compatible to realizing the "Three Transformations". Its reform must adhere to the following principles:

1. It must be conducive to thorough execution of the "Guarantee the Military and Transfer to the Civilian, Military and Civilian Combination" guideline. Civilian goods and technology market must be developed with great effort under the premise of guaranteeing accomplishment of military scientific research and production duties.

2. The goal of leanness, integration and effectiveness must be reached to effectively guarantee the director's exercise of decision-making authority, so that decision-making is quick and command is flexible. For this reason, organization must be lean and personnel must be competent; organization must have a hierarchy so that there are levels of decision-making, management and execution with distinctive subdivisions and clear responsibilities; organization must be shaped like a matrix: the director executes vertical leadership of every operational department through a deputy director, chief engineer and chief accountant; it is best to create a position of planning and management deputy director to assist the director in management and enhance lateral coordination.

3. Upgrade the management organization that maintains control over scientific research production cost and other various management expenses. Its purpose is to strictly control funding, prepare a budget well for a research subject, make a statistical analysis

for various investment returns and timely provide the leadership with information in order to achieve low cost, little waste and high effects.

4. Upgrade the management organization that develops the technology market. Assign to this organization comrades capable of managing and developing in order to create a new horizon as quickly as possible.

5. Enhance democratic management of the rank and file. Constantly motivate the entire rank and file to have a sense of responsibility as the master through this means.

V. Vigorously Engaging in Selected Management Activities is the Center Linkage to Realizing the "Three Transformations"

Paying special attention to the basic establishment of selected management activities and conducting good accumulation of various data and statistical work will enable us to comparatively, analytically and scientifically conclude experience, to search for rules and thus make management activities upgraded and constantly involved. The following is the discussion of several selected management activities:

1. Project Management. It occupies the lead position in the entire management activity; every management activity must revolve around a project to develop. The key to planning management is to first investigate associated circumstances for planning the project and conduct project forecast, and more scientifically, generalize and balance the finalized version to plot the flow diagram. Then organize implementation and coordination and solve problems encountered during implementation to make it operate efficiently. It is required that comrades of high quality and with more experience be selected to be in charge of project management activities; it is required that all personnel obey the maneuvering of the project management staff and exert all efforts to complete missions according to the flow diagram;

it is required that the project management staff concentrate on project management, study its problems and constantly summarize and upgrade to become effective managers specializing in their fields.

2. Technology Management. It is the important guarantee to realizing planning management and is the basis for obtaining technological cost effectiveness. First, the technological development planning must be well drafted and included in the plans to be implemented year after year; secondly, daily technical management of various research and trial production items must be well handled, e.g.concentrate on thorough execution of scientific research work procedures, scheme verification, special topic study and technology breakthrough and certification, etc. Efforts must be expended to avoid large-scale duplication. To successfully conduct technology is not only the direct responsibility of personnel involved in technical guidance (e.g.chief and deputy chief engineer, research department director, technical management department) but is also the responsibility of the engineering technical personnel who are in charge of research and manufacturing duties. To earnestly follow through the scientific research work procedures is the key to avoid the occurrence of major problems in daily technology management activities. The activities must be conducted in strict accordance with the stages divided by procedures. Grounds must be held firmly and only when the requirements of primary goal have been reached can the next stage be entered. We must neither cause confusion nor exceed the set stages, and we must make proper transferring into new stages in a timely manner.

3. Quality Management. Without quality, there is no quantity and planning progress, nor are there customers and effects and might even cause ruin of reputation. Restoration based on technology and survival based on quality are now factory enterprises should be run, and from now on, institutes are also no

exception. Therefore, quality control must be implemented to guarantee quality.

4. Standardization Management. This is a technically based work and its application should be actively promoted. With a high level of standardization, it is significant to speeding up progress of scientific research and production plans, upgrading quality, reducing waste and increasing cost effectiveness.

5. Materiel Management. It is directly related to the two important problems of completion of scientific research and production plans and magnitude of cost effectiveness. Except for the timely providing of required materiel for scientific research and production, management must also be enhanced. Cost control is implemented to prevent waste and stop loopholes. The latter can be dealt with using the following methods: Number one is to implement the system of receiving supplies by presenting the authorization card. The authorization card sets the funding limit, i.e. first determine the total amount of subject annual funding; then it is subdivided and assigned to the individual who is responsible for the duty based on the entire organization, branch offices and sections, and the authorization card dispensed will show the funding limit. When the materiel received exceeds the limit, an application must be filed and more funding can be made available retroactively after review and approval by the planning department. Otherwise, the warehousekeeper has the authority to refuse issuance of supplies. This can not only prevent impersonation cases from happening but is also convenient for auditing; number two is to implement the system of limited supplies and reward for conserving. For example, the limited supply standards for scientific research materiel can be set based on the three different types of basic scientific research, model trial manufacturing and production items and according to different components and raw material as well as different proportions. And there will be a reward for conserving to be within the limit

range (determine reasonable reward proportion), whereas there will be no reward for exceeding the limit, and the reasons for exceedance will be investigated. Or, different run rates (the ratio of materiel run to actual quantity of materiel received) can be determined according to the three aforementioned types; for those that are higher than the run rate will be rewarded based on set proportion, for those that are lower than the run rate, no reward is issued and the reasons are investigated. This method will produce an active effect and the key is to determine the limited supply standards. The degree of difficulty and amount of work required are greater; but through earnest implementation to perform good statistical analysis and summarize experience and reach for perfection, more reasonable limiting standards can be certainly developed.

6. Finance Management. Its key points are to conduct financial monitoring well, uphold financial discipline, and locate new funding sources and conserve. The budget for research topic funding, analysis of technical cost effectiveness and investment management and results analysis of other areas must be performed well. It must actively coordinate with related departments to propose measures and methods for upgrading technical cost effectiveness and, after approval by the director, be thoroughly implemented.

VI. Implementing Goal Management, Establishing the Technical Economic Responsibility System Which Combines Responsibility, Authority and Benefit, and Which Centers Around Contracting Are the Important Measures to Realizing the "Three Transformations".

The so-called "Goal Management" is the management process which tries to arrange steps so as to realize specific goals (or conditions) within a required time frame; it is one way to organize activity at the institutes; in other words, it is a method of planning and controlling actual performance. How the military institutes should implement goal management is still a new subject, and some rough ideas and means are proposed as

follows:

1. Goal Setting. The first thing in implementing goal management is to set goals. It includes the following contents: (1) scientific research and production management developmental plan; (2) quantity of science and technology results, technology level and requirements for promoting application; (3) cost effectiveness and average return per person; (4) within the allowed range of national policy to improve and upgrade the material and cultural standard of living of the rank and file. Generally speaking, it is better to set a three-year (or five-year) overall struggling goal. The year-by-year struggling goals are set under the overall goal.

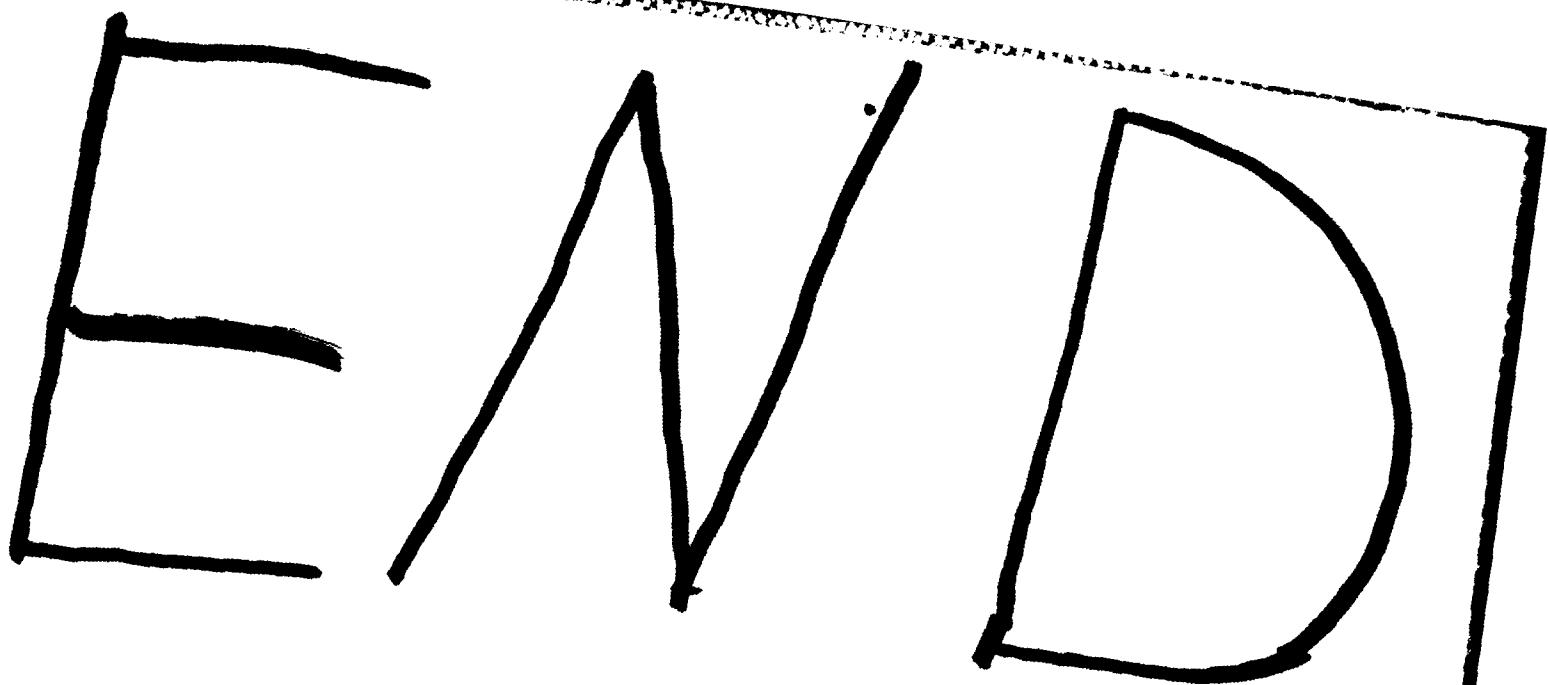
2. Handle Internal Contract Well. Through contract the activeness of rank and file is fully mobilized, and its method is: (1) further divide the struggling goal of every year to make the index clear and implement hierarchical contracting. The contracting type is determined according to specific circumstances of this institute, e.g. conduct longitudinal (subject) contracting or lateral (use research room, machine shop as unit) contracting, or longitudinal and lateral combined contracting method, then subcontract to individuals by subject or unit; (2) establish and perfect the technical economic responsibility system within the contract system, expand the authority of contractor (unit) to be conducive to completing contractual obligations; (3) since warranty conditions of related departments are required for completing contractual obligations should be established to link units up tightly; (4) stringent evaluation, and reward and punishment will be carried out. There must be a specific evaluation method. Rewards should be closely linked with the amount of responsibility, size of duty, degree of difficulty, level of technology, evaluation of quality and comparison of efficiency, and their frequency spaced out. Don't play favoritism, and nepotism and factionalism are especially not allowed.

In order to push the development of contracting activities, there should be no bonus for those who do not have contracts; the basic wages should be cut (depending on seniority) for those who have chronically been without contracts; if the personnel are under the contract system, they should be terminated upon the completion of contract. It should be pointed out that this is an endeavor of a stronger policy nature, therefore should not be taken lightly. If someone is unable to take on a contract due to sickness or old age, it is better to just reduce or not reduce basic wages.

3. Problems that Should be Noted. The goal set must be beyond practical capability in order to motivate fighting spirit, yet it must also be achievable through hard work. This has set higher demands for project management and those who are in this field. The goal of every unit, every subject and every individual must be very clear without vagueness, otherwise goal management can not be smoothly conducted. Technology development advances constantly. Goal setting must be geared toward changes and allow proper adjustment, but not blindly. Every management department must hold its ground firmly and assist lower levels and individuals to achieve their goals and complete their contractual obligations.

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